

CERTIFICATE OF PRODUCT CONFORMITY

Dubai Central Laboratory Department (DCLD) of Dubai Municipality
hereby attests that the product(s)

Solar Collector

(Details as per the attached Scope of Certification)

manufactured by:

HELIONAL NALBANTIS SONS CO

Oreokastro Industrial Park, P.O. Box 89, 87013, Thessaloniki, Greece

have been assessed in accordance with DCLD Document Ref. No. DM-DCLD-RD-DP21-2001 (IC) "General Rules for DM third party product certification system through factory assessment" and the relevant Specific Rules, and were found in conformity with the standard specification:

BS EN 12975-1: 2010

Accordingly, DCLD hereby authorizes the above manufacturer
to affix the DCL Product Conformity Mark on the above-mentioned product(s).



for / ENGR. AMIN AHMED AMIN
Director, Dubai Central Laboratory Department
Dubai Municipality



Certificate No: CL16020395
Valid Until: 17/10/2019



Current Issue Date: 18/10/2018
Original Issue Date: 18/10/2016

The attached Scope of Certification bearing the same Certificate Number forms an integral part of this Certificate.
This Certificate is an electronic document subject to the Terms and Conditions of the Product Certification System and shall not be reproduced except in full.

DUBAI CENTRAL LABORATORY DEPARTMENT DCL PRODUCT CONFORMITY CERTIFICATION SCHEME

SCOPE OF CERTIFICATION FOR CERTIFICATE NO. CL16020395

Certificate Issued To: **HELIONAL NALBANTIS SONS CO.**
Oreokastro Industrial Park, P.O. Box 89, 57013,
Thessaloniki, Greece

Applicable Standard Specification: BS EN 12975-1:2006 +A1: 2010 – Thermal solar systems and components – Solar Collectors – Part 1: General requirements

Applicable Specific Rules: RD-DP21-2178 (IC) – Specific Rules Certification of Solar Collectors as per BS EN 12975-1 Through Factory Assessment

RD-DP21-2084 (IC) – Guidelines for Factory Production control Plan for Solar Collector Manufacturers

S/N	PRODUCT DESCRIPTION	BRAND NAME	PRODUCT DETAILS
1	<p><u>Glazed Flat Plate Solar Collector</u> <u>FPS+ (Full Plate Selective)Cu/Cu</u> <u>family</u></p> <p>Absorber Materials: Copper coated with Titanium Oxide Selective BLAU surface with 0.20mm thickness, 94.7% absorptance and 5.5% emittance, ultrasonically welded into 10mm x 0.5mm riser copper tubes joint with 22mm x 0.8mm header copper tubes ;</p> <p>Mistlite Low Iron Extra Clear Tempered Glass 3.2mm thickness with 91.60 % transmittance top cover;</p> <p>Rockwool back thermal insulation with density of 50 kg/m³ & thickness of 50mm and rockwool lateral insulation with density of 100 kg/m³ & thickness of 20mm for insulation;</p> <p>Frame structure made of Specially designed Anodized Aluminum Profile and galvalumin sheet for base sheeting;</p> <p>Neutral silicone watertight sealed and EPDM joint between the solar glass and the Aluminum Casing;</p>	<u>"HELIONAL"</u>	<p>FPS+ 1.5 (Low Flow) Gross area of 1.45 m² and Absorber area of 1.32 m²; Gross dimensions: 1480 x 980 x 115 mm; Weight (dry & packed): 32 kg; Thermal liquid volume: 1.56 Liters; Fluid capacity: 1.035-1.037 g/cm³; Absorber pipe dimensions: Header – 22 x 0.8 mm and Risers – 10 x 0.5 mm; No. of Vertical Tubes is 10; No. of Horizontal Tubes is 2; Maximum test pressure is 10 bar; Maximum thermal working pressure is 6 bar; Minimum angle of inclination is 15°; Maximum angle of inclination is 90°; Maximum stagnation temperature is 216.6 °C</p> <p>FPS+ 2.0 (Low Flow) Gross area of 1.94 m² and Absorber area of 1.78 m²; Gross dimensions: 1980 x 980 x 115 mm; Weight (dry & packed): 42 kg; Thermal liquid volume: 1.87 Liters; Fluid capacity: 1.035-1.037 g/cm³; Absorber pipe dimensions: Header – 22 x 0.8 mm and Risers – 10 x 0.5 mm; No. of Vertical Tubes is 10; No. of Horizontal Tubes is 2; Maximum test pressure is 10 bar; Maximum thermal working pressure is 6 bar; Minimum angle of inclination is 15°; Maximum angle of inclination is 90°; Maximum stagnation temperature is 216.6 °C</p> <p>FPS+ 2.0 (4 inlets) Gross area of 1.94 m² and Absorber area of 1.78 m²; Gross dimensions: 1980 x 980 x 115 mm; Weight (dry & packed): 42 kg; Thermal liquid volume: 1.87 Liters; Fluid capacity: 1.035-1.037 g/cm³; Absorber pipe dimensions: Header – 22 x 0.8 mm and Risers – 10 x 0.5 mm; No. of Vertical Tubes is 10; No. of Horizontal Tubes is 2; Maximum test pressure is 10 bar; Maximum thermal working pressure is 6 bar; Minimum angle of inclination is 15°;</p>

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			<p>Maximum angle of inclination is 90°; Maximum stagnation temperature is 216.6 °C</p> <p>FPS+ 2.4 (low flow) Gross area of 2.33 m² and Absorber area of 2.17 m²; Gross dimensions: 1980 x 1180 x 115 mm; Weight (dry & packed): 51 kg; Thermal liquid volume: 2.25 Liters; Fluid capacity: 1.035-1.037 g/cm³; Absorber pipe dimensions: Header – 22 x 0.8 mm and Risers – 10 x 0.5 mm; No. of Vertical Tubes is 12; No. of Horizontal Tubes is 2; Maximum test pressure is 10 bar; Maximum thermal working pressure is 6 bar; Minimum angle of inclination is 15°; Maximum angle of inclination is 90°; Maximum stagnation temperature is 216.6 °C</p> <p>FPS+ 2.4 (4 inlets) Gross area of 2.33 m² and Absorber area of 2.17 m²; Gross dimensions: 1980 x 1180 x 115 mm; Weight (dry & packed): 51 kg; Thermal liquid volume: 2.25 Liters; Fluid capacity: 1.035-1.037 g/cm³; Absorber pipe dimensions: Header – 22 x 0.8 mm and Risers – 10 x 0.5 mm; No. of Vertical Tubes is 12; No. of Horizontal Tubes is 2; Maximum test pressure is 10 bar; Maximum thermal working pressure is 6 bar; Minimum angle of inclination is 15°; Maximum angle of inclination is 90°; Maximum stagnation temperature is 216.6 °C</p>
2	<p><u>Glazed Flat Plate Solar Collector</u> <u>MS (Magna Solar)Cu/Al family</u></p> <p>Absorber Materials: Mirotherm surface aluminium with 0.4mm thickness, 95.0% solar absorptance and 5.0% hemispherical emittance, laser welded into 8mm riser copper tubes joint with 22mm header copper tubes ;</p> <p>Clear/matt Low Iron Tempered Glass 3.2mm thickness with 91.60 % transmittance top cover;</p> <p>Rockwool back thermal insulation with density of 40 kg/m³ & thickness of 30mm and rockwool lateral insulation with density of 100 kg/m³ & thickness of 20mm for insulation;</p> <p>Frame structure made of Specially designed Aluminum Profile and galvalumin sheet for base sheeting;</p> <p>Neutral silicone watertight sealed and EPDM joint between the solar glass and the Aluminum Casing;</p>	<u>"HELIONAL"</u>	<p>MS 1.5 Gross area of 1.45 m² and Absorber area of 1.22 m²; Gross dimensions: 1480 x 980 x 84 mm; Weight (dry & packed): 25.4 kg; Effective Thermal Capacity is 11.308 J/K.m²; Thermal liquid volume: 1.19 Liters; Fluid capacity: 1.035-1.037 g/cm³; Absorber pipe dimensions: Header – 22 x 0.8 mm and Risers – 10 x 0.5 mm; No. of Vertical Tubes is 9; No. of Horizontal Tubes is 2; Maximum test pressure is 10 bar; Maximum functional pressure is 6 bar; Maximum stagnation temperature is 199.9 °C</p> <p>MS 2.0 Gross area of 1.94 m² and Absorber area of 1.66 m²; Gross dimensions: 1980 x 980 x 84 mm; Weight (dry & packed): 33.4 kg; Effective Thermal Capacity is 11.308 J/K.m²; Thermal liquid volume: 1.37 Liters; Fluid capacity: 1.035-1.037 g/cm³; Absorber pipe dimensions: Header – 22 x 0.8 mm and Risers – 10 x 0.5 mm; No. of Vertical Tubes is 9; No. of Horizontal Tubes is 2; Maximum test pressure is 10 bar; Maximum functional pressure is 6 bar; Maximum stagnation temperature is 199.9 °C</p>



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			<p>MS 2.4 Gross area of 2.33 m² and Absorber area of 2.02 m²; Gross dimensions: 1980 x 1180 x 84 mm; Weight (dry & packed): 39.6 kg; Effective Thermal Capacity is 11.308 J/K.m²; Thermal liquid volume: 1.66 Liters; Fluid capacity: 1.035-1.037 g/cm³; Absorber pipe dimensions: Header – 22 x 0.8 mm and Risers – 10 x 0.5 mm; No. of Vertical Tubes is 11; No. of Horizontal Tubes is 2; Maximum test pressure is 10 bar; Maximum functional pressure is 6 bar; Maximum stagnation temperature is 199.9 °C</p>
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NOTE 1: The above products shall bear the DCL Conformity Mark applied on each individual product.

NOTE 2: This document forms part of the Certificate of Product Conformity bearing the same certificate number.

Original Issue Date : 18 October 2016
Current Issue Date : 18 October 2018
Valid Until : 17 October 2019

ARIF HUSAIN AL MARZOOQI
Products Conformity Assessment Section Manager
Dubai Central Laboratory Department